

Comparisons of Job Characteristics

Focus Occupation: [Civil Engineering Technicians \(17-3022\)](#)

Associated Occupation: [Engineers, All Other \(17-2199\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 67

Focus Occupation: Civil Engineering Technicians (17-3022)

Associated Occupation: Engineers, All Other (17-2199)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Engineering and Technology	5.7	20.1	15.6	<<	Extensive education and/or training may be required
Mathematics	9.2	17.1	15.0	<	Expanded education and/or training may be required
Design	5.2	16.5	14.1	<	Expanded education and/or training may be required
Computers and Electronics	8.4	15.0	10.8	<<	Extensive education and/or training may be required
Physics	4.3	14.8	7.0	<<	Extensive education and/or training may be required
Mechanical	6.8	14.0	4.5	<<	Extensive education and/or training may be required
Production and Processing	6.0	12.9	3.7	<<	Extensive education and/or training may be required
Building and Construction	4.0	6.6	15.1	>>	Current knowledge level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 84

Focus Occupation: Civil Engineering Technicians (17-3022)

Associated Occupation: Engineers, All Other (17-2199)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Mathematics	6.2	12.8	8.7	<<	Extensive development of skills in this area may be required

Systems Analysis	6.5	11.7	6.9	<<	Extensive development of skills in this area may be required
Science	4.5	11.4	5.4	<<	Extensive development of skills in this area may be required
Systems Evaluation	6.4	11.1	6.6	<<	Extensive development of skills in this area may be required
Operations Analysis	5.0	10.8	7.9	<<	Extensive development of skills in this area may be required
Technology Design	2.6	7.9	2.8	<<	Extensive development of skills in this area may be required
Equipment Selection	3.3	6.3	1.3	<<	Extensive development of skills in this area may be required
Programming	2.2	5.3	1.8	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 97			
Focus Occupation: Civil Engineering Technicians (17-3022) Associated Occupation: Engineers, All Other (17-2199)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Written Comprehension	11.0	15.1	11.4	<<	Extensive improvement in abilities may be required
Deductive Reasoning	10.6	15.0	11.4	<<	Extensive improvement in abilities may be required
Inductive Reasoning	10.2	13.7	9.9	<<	Extensive improvement in abilities may be required
Mathematical Reasoning	6.3	13.4	10.3	<<	Extensive improvement in abilities may be required
Information Ordering	9.9	13.2	10.3	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	12.3	9.4	<<	Extensive improvement in abilities may be required
Originality	7.6	11.8	8.4	<<	Extensive improvement in abilities may be required
Visualization	7.5	11.7	11.4	0	Current ability level may be sufficient
Number Facility	6.3	11.6	9.2	<	Some improvement in abilities may be required
Fluency of Ideas	7.6	11.4	8.1	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

There are no common work activities.

Tools and Technologies that Both Occupations Have in Common	Similarity of Focus Occupation to Associated Occupation: 71
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Focus Occupation: Civil Engineering Technicians (17-3022)
Associated Occupation: Engineers, All Other (17-2199)

Tools and Technologies	Exclusivity
Audio and visual equipment	4
Chemical evaluation instruments and supplies	10
Computer data input devices	2
Computer printers	2
Computers	1
Content authoring and editing software	1
Cutting and crimping and punching tools	3
Electrochemical measuring instruments and accessories	9
Fluid mechanics equipment	11
Humidity and moisture measuring instruments	15
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Laboratory heating and drying equipment	13
Laboratory mixing and stirring and shaking equipment and supplies	19
Laboratory ovens and accessories	15
Length and thickness and distance measuring instruments	2
Mechanical instruments	14
Metals and metallurgy and structural materials testing instruments	15
Meteorological instruments	16
Network applications software	1
Sampling equipment	12
Soil measuring equipment	20
Temperature and heat measuring instruments	6
Transducers	23
Weight measuring instruments	7

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.